

PATENT
674523-2028**REMARKS**

Reconsideration and withdrawal of the rejections of the application are requested in view of the amendments and remarks presented herein, which place the application into condition for allowance.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 24, 26-34, 36-38 and 40-43 are pending in this application. Claims 24, 31, 34 and 37 have been amended.

Support for the amended claims can be found throughout the specification. No new matter is added by this amendment.

It is submitted that these claims are in full compliance with the requirements of 35 U.S.C. §112. The amendments of the claims herein are not made for the purpose of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112; but rather, the amendments are made simply for clarification and to round out the scope of protection to which Applicants are entitled. Furthermore, it is explicitly stated that the herewith amendments should not give rise to any estoppel, as the herewith amendments are not narrowing amendments.

II. THE REJECTIONS UNDER 35 U.S.C. §112, 1ST PARAGRAPH, ARE OVERCOME

Claims 24, 26-34, 36-38 and 40-43 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. The rejection is traversed.

The Office Action states that the specification does not disclose functional portions of an LTR comprising HIV U3 and R regions and having Tat inducible promoter activity. This recitation has been removed from claims 24, 34 and 37, obviating the rejection on that basis.

The Office Action goes on to allege that the specification does not disclose any other functional equivalent of the HIV Rev/Rev response element (RRE) system. To the contrary, the specification teaches that analogous systems may be found in other retroviruses, for example the rex/RxRE system in HTLV-1 (see the paragraph beginning on page 7, line 1). Rimsky *et al.* (Nature, 1988 Oct 20, 335(6192): 738-40; abstract enclosed) reported that HTLV Rex is a functional equivalent of HIV rev. This information was available to the skilled artisan prior to the time the instant application was filed. The paragraph beginning on page 7, line 1, of the specification also teaches that the "transport factor may alternatively be any factor, originating

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e.g. from other viruses or from host cells, which is analogous to Rev in that it enables transport to the cytoplasm via a specific interaction with the response element."

References to other Rev/RRE system functional equivalents can also be found in the enclosed reference by Tabernero *et al.* (1996). This reference was available before the earliest priority date of the instant application, and discusses *cis*-acting transactivation elements (CTEs) from simian retrovirus type 1 (SRV-1), simian retrovirus type 2 (SRV-2), and Mason-Pfizer monkey virus (MPMV). Therefore knowledge of and a description as to the availability of a representative number of species was present in the art prior to the time the invention was filed. One skilled in the art, at the time the application was filed, would have recognized that other Rev/RRE systems could perform the same function as the HIV Rev/RRE system, and that the Applicants were in possession of the claimed genus.

Claims 24, 26-34, 36-38 and 40-43 were rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enablement. The rejection is traversed.

The claims have been amended to recite a 5' LTR comprising an HIV U3 and R region having Tat inducible activity. The Examiner agrees, on page 6 of the Office Action, that this portion of the invention is clearly enabled. The Office Action alleges that the specification only discloses an HIV RRE. As discussed above, that is not the case.

According to the Court of Appeals for the Federal Circuit in the case of *In re Wands*, 8 U.S.P.Q. 2d 1400 (Fed. Cir. 1988), determining whether undue experimentation is required to practice a claimed invention turns on weighing many factors, for example, (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples of the invention; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims.

Undue experimentation is not required in this case. The quantity of experimentation required to substitute Rev/RRE equivalents for HIV Rev/RRE is low. Direction and examples showing how to make and use such a system are present in the specification. The state of the art is such that several Rev/RRE systems that perform equivalently to the HIV Rev/RRE system are known and described; and, the level of skill in the art is high. One of skill in the art would be able to use the instant specification and the knowledge available in the art at the time the application was filed to produce a retroviral vector particle comprising, *inter alia*, any known

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Rev/RRE system. It would be well within the means of the skilled artisan to determine and evaluate such a system that enhances export of RNA transcripts of the vector genome from the nucleus to the cytoplasm of an infected cell.

In view of the amendments and arguments, reconsideration and withdrawal of the Section 112, first paragraph, rejections are requested.

III. THE REJECTION UNDER 35 U.S.C. §112, 2ND PARAGRAPH, IS OVERCOME

Claims 31 and 32 were rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. Claim 31 has been amended to correct the antecedent basis, thereby overcoming its rejection and that of dependent claim 32. Consequently, reconsideration and withdrawal of the rejection are requested.


CONCLUSION

In view of the remarks and amendments herewith, it is believed that the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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